



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,919	04/09/2002	James Anthony Larkin	7038.3010.001	1465

7590 05/29/2003

Robert L Stearns  
5291 Colony Drive North  
Saginaw, MI 48603

EXAMINER

SY, MARIANO ONG

ART UNIT

PAPER NUMBER

3683

DATE MAILED: 05/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/019,919

Applicant(s)

LARKIN ET AL.

Examiner

Mariano Sy

Art Unit

3683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 12-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1-1/2, 5. 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The preliminary amendment filed on June 18, 2002 has been received.
2. A substitute specification excluding the claims is required pursuant to 37 CFR 1.125(a) because most of the instructions to "rewrite the paragraph" were showing incorrect direction for the "line number". For example, rewrite the paragraph beginning: at line 22 of page 1 should be --line 22--; at line 16 of page 2 should be --line 13--.

A substitute specification filed under 37 CFR 1.125(a) must only contain subject matter from the original specification and any previously entered amendment under 37 CFR 1.121. If the substitute specification contains additional subject matter not of record, the substitute specification must be filed under 37 CFR 1.125(b) and must be accompanied by: 1) a statement that the substitute specification contains no new matter; and 2) a marked-up copy showing the amendments to be made via the substitute specification relative to the specification at the time the substitute specification is filed.

3. Abstract, page 19 is objected to because line 9 recites "Such provides independence of the resilient bias". It is unclear what the word "such" is refer to.
4. Claims 11-21 are objected because Applicant made a mistake in the Preliminary Amendment canceling claims 1-10 which should be claims 1-11. All added new claims will be renumbered starting from claims 12-22 accordingly.

Art Unit: 3683

5. Claim 12 is objected to because of the following informalities:

Line 8 "the at least one braking disc" should be --the at least one brake disc--.

Claim 18 is objected to because of the following informalities:

Line 1 "said spring device" should be --said resilient device--.

Appropriate correction is required.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: reference character "64" in figure 6. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect may be deferred until after the examiner has considered the proposed drawing correction. Failure to timely submit the proposed drawing correction will result in the abandonment of the application.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3683

8. Claims 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites the limitation "method of making" in line 1. It is unclear if Applicant is referring to --method of mounting--.

### ***Double Patenting***

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 12, 14, 15, and 19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 18, 19, 24, 26, 27, and 33 of copending Application No. 09/995,935. Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant

Art Unit: 3683

application are claiming common subject matter, as follows: brake disc, hub or rotatable mounting, pair of friction elements, and spring members or resilient device.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 12-15, 17-19, 21, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by C.E. Strain et al. (U.S. Patent Number 3,233,704).

Re-claims 12 and 13 C.E. Strain et al. disclose, as shown in fig. 1-4, a method of mounting a disc brake system comprising: providing at least one brake disc 22 having braking surfaces on opposite sides of the brake disc; supporting the brake disc on a rotatable mounting 24 wherein the brake disc is rotatable and slidable axially relative to the rotatable mounting; arranging at least one pair of friction elements on opposite sides of the brake disc operative when actuated to axially displace the brake disc and frictionally engage the braking surfaces of the brake disc; and mounting a plurality of resilient spring members 32 at circumferentially spaced locations on the brake disc slidable axially with the brake disc and exerting a constant bias force between the brake disc and rotatable mounting.

Art Unit: 3683

Re-claim 14 C.E. Strain et al. disclose, as shown in fig. 1-4, a method of mounting an axially movable brake disc 22 on a rotatable mounting 24 of a disc brake system comprising: providing a resilient device 32, adapted to act between the brake disc and rotatable mounting, at circumferentially spaced positions around the brake disc, and mounting the resilient device on the brake disc for axial movement with the brake disc and to apply a resilient bias force directed on the brake disc to the rotatable mounting.

Re-claims 15, 17, and 18 C.E. Strain et al. disclose, as shown in fig. 1-4, a disc brake system comprising: a rotatable mounting 24; at least one brake disc 22 supported on said rotatable mounting for relative axial displacement and for rotation therewith, said brake disc having braking surfaces on opposite sides; at least one pair of friction elements operate when actuated to frictionally engage said brake surfaces of said brake disc; and a resilient device 32, comprises at least one spring 33 having resilient flanges 34 disposed under stress between brake disc and rotatable mounting, mounted circumferentially spaced locations on said brake disc and movably axially with said brake disc relative to said rotatable mounting, said resilient device apply a resilient bias force directed from said brake disc to said rotatable mounting.

Re-claims 19, 21, and 22 C.E. Strain et al. disclose, as shown in fig. 1-4, a disc brake system comprising: an axially movable brake disc 22 supported on a rotatable mounting 24; a resilient device 32, comprises at least one leaf spring 33 having resilient flanges 34 disposed under stress between brake disc and rotatable mounting, mounted at circumferentially spaced positions around said brake disc for axial movement with

Art Unit: 3683

said brake disc and to apply a resilient bias force directed from said brake disc to said rotatable mounting.

13. Claims 12-16, 18-20, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Lupertz (U.S. Patent Number 4,256,209).

Re-claims 12 and 13 Lupertz discloses, as shown in 1-2, a method of mounting a disc brake system comprising: providing at least one brake disc 1 having braking surfaces on opposite sides of the brake disc; supporting the brake disc on a rotatable mounting 4 wherein the brake disc is rotatable and slidable axially relative to the rotatable mounting; arranging at least one pair of friction elements on opposite sides of the brake disc operative when actuated to axially displace the brake disc and frictionally engage the braking surfaces of the brake disc; and mounting a plurality of resilient spring members 3 at circumferentially spaced locations on the brake disc slidable axially with the brake disc and exerting a constant bias force between the brake disc and rotatable mounting.

Re-claim 14 Lupertz discloses, as shown in 1-2, a method of mounting an axially movable brake disc 1 on a rotatable mounting 4 of a disc brake system comprising: providing a resilient device 3, adapted to act between the brake disc and rotatable mounting, at circumferentially spaced positions around the brake disc, and mounting the resilient device on the brake disc for axial movement with the brake disc and to apply a resilient bias force directed on the brake disc to the rotatable mounting.



Art Unit: 3683

Re-claims 15 and 18 Lupertz discloses, as shown in 1-2, a disc brake system comprising: a rotatable mounting 4; at least one brake disc 1 supported on said rotatable mounting for relative axial displacement and for rotation therewith, said brake disc having braking surfaces on opposite sides; at least one pair of friction elements operate when actuated to frictionally engage said brake surfaces of said brake disc; and a resilient device 3, comprises at least one spring, mounted circumferentially spaced locations on said brake disc and movably axially with said brake disc relative to said rotatable mounting, said resilient device disposed under stress and apply a resilient bias force directed from said brake disc to said rotatable mounting.

Re-claims 16 and 20 Lupertz discloses, as shown in 1-2, wherein said brake disc includes drive keys 8 engaging associated drive keyways 12 of said rotatable mounting, said resilient device straddling said drive keys of said brake disc.

Re-claims 19 and 22 Lupertz discloses, as shown in 1-2, a disc brake system comprising: an axially movable brake disc 1 supported on a rotatable mounting 4; a resilient device 3, disposed under stress between brake disc and rotatable mounting, mounted at circumferentially spaced positions around said brake disc for axial movement with said brake disc and to apply a resilient bias force directed from said brake disc to said rotatable mounting.

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 3683

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

16. Claims 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over C.E. Strain et al.

Re-claims 16 and 20 C.E. Strain et al. disclose, as shown in fig. 1-4, wherein said brake disc includes drive keyways 26 engaging associated drive keys 28 of said rotatable mounting, said resilient device straddling said drive keyways of said brake disc. However C.E. Strain et al. fails to show the exact type of connections between the brake disc and rotatable mounting with regards to the drive keys and drive keyways.

One skill in the art would have modify the connections by reversal between the drive keys and drive keyways on the brake disc and the rotatable mounting, is a matter of design choice or an alternate equivalent connections, since the reversal will not

Art Unit: 3683

destroy the functionality of slidable axially between the drive keys and drive keyways on the brake disc and the rotatable mounting.

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Eldred (U.S. Patent Number 3,754,624) discloses a flexible key for disc brake.

Taylor (U.S. Patent Number 4,043,437) discloses a torque limiting clutch brake.

Bair et al. (U.S. Patent Number 5,383,538) discloses a brake squeal spring clip dampener.

Bunker (U.S. Patent Number 6,305,510 B1) discloses a disc brake system.

Bunker (U.S. Patent Number 6,457,567 B1) discloses a leaf spring for a disc brake.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariano Sy whose telephone number is 703-308-3427.


The examiner can normally be reached on Mon.-Fri. from 9:00 A.M. to 3:00 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder, can be reached on (703) 308-3421. The fax phone number for the organization where this application or proceeding is assigned is 703-305-7687.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.


Application/Control Number: 10/019,919

Page 11

Art Unit: 3683

 M. Sy

May 21, 2003

  
JACK LAVINDER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600